

CLAIMS

1. Cross-linked hyaluronic acids obtainable by reaction of the carboxylic groups of hyaluronic acid and a polyamine.

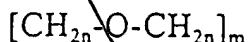
5 2. Cross-linked hyaluronic acids according to claim 1 wherein the polyamine is a diamine.

3. Cross-linked hyaluronic acids according to claim 2 wherein the diamine has the formula



wherein A is a $C_2 - C_{10}$ linear or branched alkylene chain, preferably a $C_2 - C_6$ chain, optionally substituted by hydroxy, carboxy, halogen, alkoxy and amino groups; a polyoxyalkylene chain $[(CH_2)_n-O-(CH_2)_n]_m$ wherein n is 2 or 3, m is an integer from 2 to 10; an aryl or hetaryl group, preferably 1, 4 or 1,3 disubstituted benzene; R_1 and R_2 , which are the same or different, are hydrogen, C_1-C_6 alkyl, phenyl or benzyl groups.

15 4. Cross-linked hyaluronic acids according to claim 3 wherein A is a linear $C_2 - C_6$ alkylene or a chain of formula



wherein n is 2 and m is an integer from 2 to 10.

20 5. Cross-linked hyaluronic acids according to any one of claims 1 to 4 wherein the hydroxy groups are sulphated or hemisuccinylated.

6. Cross-linked hyaluronic acids according to any one of the previous claims in the form of gel.

7. Cross-linked hyaluronic acids according to any one of the previous claims in solid or semi-solid forms.

25 8. Complexes of zinc, copper or iron of claims 1-7.

9. The use of cross-linked hyaluronic acids derivatives of claims 6 and 8 as substitutes of synovial fluid, vitreous humor, as controlled-release matrices forms medicaments, as healing and antiadhesive agents.

10. The use of cross-linked hyaluronic acids derivatives of claim 7 for the preparation of vascular prosthesis, biohybrid organs, healing devices, ophthalmic and otological compositions, prosthesis, implants and medical devices.

5 11. Biomaterials comprising the cross-linked hyaluronic acids of claims 1 - 8.

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